



# Course Weekly Outline

**Course Name: Compiler**

<b>Course Instructor</b>	Sumaya Abdulla Hamad				
<b>E-mail</b>	<a href="mailto:sumay_1980@yahoo.com">sumay_1980@yahoo.com</a>				
<b>Title</b>	Asst. Teacher				
<b>Course Coordinator</b>	Sumaya Abdulla Hamad				
<b>Course Objective</b>	<p>A. Definition of how to build and design of programming languages by looking at the work of the translator techniques and how to build it</p> <p>B. Training students to design and build programming languages through the implementation of some stages of the translator in the practical side</p> <p>C. Accommodate the student how the data is stored within the memory process through simulation methods of storage</p> <p>D. Increase the possibility of student programming by giving him examples of different issues within the limits set</p>				
<b>Course Description</b>	<p>1 - To distinguish between the types of algorithms of Compiler</p> <p>2 - Determine the best algorithm for designing compiler</p> <p>3 - The language used components to convert any algorithm to the interpreter program</p> <p>4- Determine the evolution in the field of design compilers and programming languages</p> <p>5- Distinction between the types of translators by knowing the the input and output of the compiler</p> <p>6- Take collective project to design and build compiler for some simple programming languages proposed</p>				
<b>Textbook</b>	Compilers Principles, Techniques, and Tools , Aho Law, Addison Wesley				
<b>References</b>	Basics of Compiler Design, T. Mogensen, Copenhagen Uni.				
<b>Course Assessments</b>	Term Tests	Laboratory	Quizzes	Project	Final Exam
	30%	15%	5%	-	50%
<b>General Notes</b>					



## Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	20\2\2013	Introduction to Back-End	First & follow	/
2	27\2\2013	Intermediate Code Generation	First & follow	/
3	6\3\2013	Intermediate Code Generation	First & follow	/
4	13\3\2013	Code Optimization Concepts	First & follow	/
5	20\3\2013	Local Optimization	Predicative parser	/
6	27\3\2013	Data – Flow Analysis	Predicative parser	/
7	3\4\2013	Global Optimization	Predicative parser	/
8	10\4\2013	Code Generation	Predicative parser	/
9	17\4\2013	Code Generation	Predicative parser	/
10	24\4\2013	Optimization during Code Generation	Bottom-up	/
11	1\5\2013	Assembler & Loader – Linker Editor	Bottom-up	/
12	8\5\2013	Decompiler concepts	Shift reduce parser	/
13	15\5\2013	Decompiler concepts	Shift reduce parser	/
14	22\5\2013	Compiler of Object Oriented Language	Shift reduce parser	/
15	29\5\2013	Debugging concepts	Shift reduce parser	/
Final Year Exam				

**Instructor Signature:**

**Dean Signature:**



# Course Weekly Outline

## Course Name : Communications and Networks Fundamentals

<b>Course Instructor</b>	Dr. Salah Awad Salman				
<b>E-mail</b>	Salah_eng1996@yahoo.com				
<b>Title</b>	Communications and Networks Fundamentals – CS, Computer Networks II-IS				
<b>Course Coordinator</b>	-				
<b>Course Objective</b>	<p>The students will be able to:</p> <ol style="list-style-type: none"> <li>1. Build an understanding of the fundamental concepts of computer networking.</li> <li>2. Familiarize the student with the basic taxonomy and terminology of the computer networking area.</li> <li>3. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.</li> <li>4. Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.</li> </ol>				
<b>Course Description</b>	<p>This course is to provide students with an overview of the concepts and fundamentals of data communication and computer networks. Topics to be covered include: data communication concepts and techniques in a layered network architecture, communications switching and routing, types of communication, network congestion, network topologies, network configuration and Management, network model components, layered network models (OSI reference model, TCP/IP networking architecture) and their protocols, various types of networks (LAN, MAN, WAN and Wireless networks) and their protocols.</p>				
<b>Textbook</b>	Data Communications and Networking, 3, 4 /e, Behrouz A Forouzan				
<b>References</b>	Computer Networks, Fourth Edition, Andrew S. Tanenbaum.				
<b>Course Assessments</b>	Term Tests	Laboratory	Quizzes	Project	Final Exam
	25	15	10	-	50
<b>General Notes</b>	The course is supplemented by a practical component				



## Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1-2		<b>PART 2: Physical Layer - Chapter: 5 Digital Transmission</b> <b>5.1 DIGITAL-TO-DIGITAL CONVERSION</b> Line Coding, Block Coding, Scrambling <b>5.2 ANALOG-TO-DIGITAL CONVERSION</b> Pulse Code Modulation (PCM), Delta Modulation (DM) <b>5.3 TRANSMISSION MODES</b> Parallel Transmission, Serial Transmission	Lab1: Coding	
3-4		<b>Chapter: 6 Analog Transmission &amp; Bandwidth Utilization</b> <b>6.1 DIGITAL-TO-ANALOG CONVERSION</b> ASK, FSK, PSK, QAM <b>6.2 ANALOG-TO-ANALOG CONVERSION</b> AM, FM, PM <b>6.3 MULTIPLEXING</b> FDM, WDM, STDM, S TDM <b>6.4 SPREAD SPECTRUM</b> FHSS, DSSS	Lab2: Modulation & SSS	
5-6		<b>PART 3: Data Link Layer- Chapter: 7 Error Detection, Correction &amp; Multiple Access</b> <b>7.1 INTRODUCTION</b> Types of Errors, Redundancy, Detection Versus Correction, Coding, Modular Arithmetic <b>7.2 BLOCK CODING</b> Error Detection, Error Correction <b>7.3 CYCLIC CODES</b> Cyclic Redundancy Check, Hardware Implementation <b>7.4 MAC</b> <b>7.5 CHANNELIZATION</b> FDMA, TDMA, CDMA	Lab4: TCP/IP Programming	
7-8		<b>Chapter8: Wired LANs &amp; Wireless LANs</b> <b>8.1 Wired LANs: Ethernet</b> 8.1.1 IEEE STANDARDS, 8.1.2 STANDARD ETHERNET <b>8.2 Wireless LANs</b> 8.2.1 IEEE 802. 8.2.2 BLUETOOTH	Lab6: TCP/IP Programming	
9-10		<b>PART 4 Network Layer- Chapter 9: Logical Addressing</b> <b>9.1 IPv4 ADDRESSES</b> <b>9.2 IPv6 ADDRESSES</b> <b>9.3 Internet Protocol</b> <b>9.3.1 IPv4</b> Datagram, Fragmentation, Checksum, Options, <b>9.3.2 IPv6</b> Advantages, Packet Format, Extension Headers	Lab7: TCP/IP Programming	
11		<b>Chapter 10: Address Mapping &amp; Routing</b> <b>10.1 ADDRESS MAPPING</b> ARP, RARP, BOOTP, and DHCP <b>10.2 UNICAST ROUTING PROTOCOLS</b> Intra- and Inter-domain Routing, Distance Vector Routing, Link State Routing, Path Vector Routing <b>10.1 MULTICAST ROUTING PROTOCOLS</b> Unicast, Multicast, and Broadcast, Applications, Multicast Routing, Routing Protocols	Lab7: TCP/IP Programming	
12-13		<b>PART 5 Transport Layer- Chapter 11: UDP, TCP</b> <b>11.1 PROCESS-TO-PROCESS DELIVERY</b> <b>11.2 USER DATAGRAM PROTOCOL (UDP)</b> User Datagram, Checksum, UDP Operation, Use of UDP <b>11.3 TCP</b> TCP Services, TCP Features, Segment, A TCP Connection, Flow Control	Lab8: Network Programming	

14-15		<b>PART 6 Application Layer- Chapter 12 DNS, Remote Logging, E-Mail, and FTP</b> <b>12.1 NAME SPACE</b> <b>12.2 DOMAIN NAME SPACE</b> Label , Domain Name, Domain <b>12.3 RESOLUTION</b> Resolver, Mapping Names to Addresses, Mapping Address to Names <b>12.4 REMOTE LOGGING: TELNET</b> <b>12.5 ELECTRONIC MAIL</b> <b>12.6 FILE TRANSFER</b> FTP, Anonymous FTP	Lab9:Network Programming	
16		<b>Chapter 13 WWW and HTTP</b> <b>13.1 ARCHITECTURE</b> Client (Browser), Server, Uniform Resource Locator, Cookies <b>13.2 WEB DOCUMENTS</b> Static Documents, Dynamic Documents, Active Documents <b>13.3 HTTP</b> HTTP Transaction, Proxy Server	Lab9:Network Programming	

**Instructor Signature:**

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## Course Weekly Outline

### Course Name : Database Management System

<b>Course Instructor</b>	Dr. Raed Ibraheem Hamed				
<b>E-mail</b>	Raed_inf@yahoo.com				
<b>Title</b>	Database Management System				
<b>Course Coordinator</b>					
<b>Course Objective</b>	After finishing the program students are expected to have mastered the knowledge and skills to carry out the following analytical tasks: MSA students will build and deploy analytical models across organizations that fit the underlying organizational needs and the analytical problem(s) identified				
<b>Course Description</b>	Developing and managing efficient and effective database applications requires understanding the fundamentals of database management systems, techniques for the design of databases, and principles of database administration.				
<b>Textbook</b>	Database Management Systems, Third Edition Raghu Ramakrishnan, Johannes Gehrke ISBN: 0-07-246563-8 Publisher: McGraw-Hill Higher Education Pub. Date: 2003				
<b>References</b>	<b>Fundamentals of Relational Database Management Systems</b> , By S. Sumathi and S. Esakkirajan, SpringerVerlang, 2010, ISBN 978-3-642-08012-8; eISBN 978-3-540-48399-1. (referred to below as S&E)				
<b>Course Assessments</b>	TermTests	Laboratory	Quizzes	Project	Final Exam
	40%	15%	5%		40%
<b>General Notes</b>					



### Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	18/1/٢٠١٦	Introduction to database management systems		Chapter1
2	25 /1/٢٠١٦	- Basic concepts Database Modeling		Chapter2
3	2/2/٢٠١٦	The Relational Data Model Conceptual Design: Mapping Relational Model		Chapter2
4	9/2//٢٠١٦	Database administration – Transaction Management – Concurrency Control Object		Chapter2
5	16/2/٢٠١٦	Distributed and Cloud Databases		Chapter3
6	23/2/٢٠١٦	Relational Commands, Embedded SQL, Stored Procedures, Triggers		Chapter3
7	30/2//٢٠١٦	Exam Review Functional Dependencies,		Chapter
8	6/3//٢٠١٦	Normalization		Chapter4
9	13/3/٢٠١٦	Database administration		Chapter5
10	20/3 /٢٠١٦	ER Model and Conceptual Design The Relational Model and SQL DDL		Chapter6
11	27/3/٢٠١٦	Relational Algebra and Relational Calculus		Chapter7
12	4/4/ ٢٠١٦	Physical Database Design, Database Tuning		Chapter8
13	11/4/٢٠١٦	Schema Refinement, Functional Dependencies, Normalization		Chapter8
14	18/4/٢٠١٦	Security and Authorization		Chapter9
15	25/4/٢٠١٦	A Typical Relational Optimizer		Chapter1 0

Instructor Signature:

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